

New patent claims 1 to 25

1. A wound covering (10), comprising a first layer formed by an absorbent matrix (12) and an anti-
5 microbially active substance, the substance being present chemically or physically bonded to one surface of the matrix (12), the surface of the matrix including the substance being coated with a hydrophilic polymer, the wound covering (10) comprising a second layer
10 formed by a gas-permeable but liquid-impermeable film (14) connected to the matrix (12) and having a self-adhesive first area (16), the matrix (12) being connected to the film (14) in a second area (17) and the first area being an area of the film (14) which
15 surrounds the second area (17), it being possible to stick the wound covering (10) to human or animal skin by means of the self-adhesive first area, a liquid-tight inner space which can be filled with a liquid comprising the matrix (12) being formed, the substance
20 being a metal or a metal compound.

2. The wound covering (10) as claimed in claim 1, the matrix (12) having at least one fiber or being formed from at least one fiber and the surface of the
25 matrix (12), to which the substance is bound, being a surface of the fiber.

3. The wound covering (10) as claimed in one of the preceding claims, the substance being bound
30 exclusively to the surface of the matrix or fiber.

4. The wound covering (10) as claimed in one of the preceding claims, the substance being selected from a group consisting of silver, copper and zinc, or a
35 mixture of silver, copper and zinc, or a mixture or alloy comprising at least one of these components.

5. The wound covering (10) as claimed in one of the preceding claims, the metal or the metal compound being present in the form of clusters on the fiber or surface of the matrix, in particular applied by evaporation and deposition, by a sputtering process or by chemical vapor deposition.

6. The wound covering (10) as claimed in one of the preceding claims, the substance having a mean particle size of 5 to 100 nm.

7. The wound covering (10) as claimed in one of the preceding claims, the substance being present in a layer having a mean thickness of 5 to 100 nm.

8. The wound covering (10) as claimed in one of the preceding claims, the substance being present in an amount which is antimicrobially active on thorough soaking of the matrix (12) with a liquid in the matrix (12).

9. The wound covering (10) as claimed in one of the preceding claims, the polymer being a polymer decreasing the adhesion of bacteria, preferably gram-negative bacteria or staphylococci, in particular *Staphylococcus epidermidis*, to the fiber or matrix.

10. The wound covering (10) as claimed in one of the preceding claims, the fiber or the surface of the matrix (12) being a fiber or surface coated with the polymer by means of plasma polymerization.

11. The wound covering (10) as claimed in claim 10, the polymer being a polymer oxidized after plasma polymerization.

12. The wound covering (10) as claimed in one of the preceding claims, the polymer being formed from

monomers based on acrylic acid or from monomers based on siloxane, in particular hexamethyldisiloxane.

13. The wound covering (10) as claimed in one of the preceding claims, the polymer being present in a layer having a mean thickness of 5 to 500 nm.

14. The wound covering (10) as claimed in one of the preceding claims, the substance being present in an amount in which an amount of active compounds not acting cytotoxically on a wound in the application case is formed and/or released by the substance.

15. The wound covering (10) as claimed in one of the preceding claims, substances assisting wound healing, in particular growth factors, being bound to the matrix (10).

16. The wound covering (10) as claimed in one of the preceding claims, the matrix (12) being thoroughly soaked or impregnated with a liquid assisting wound healing, in particular an acidic liquid or a liquid comprising nutrients assisting wound healing.

17. The wound covering (10) as claimed in one of the preceding claims, the film (14) being transparent, at least in places.

18. The wound covering (10) as claimed in one of the preceding claims, the wound covering being transparent to light, in particular UV light, IR light or NIR light.

19. The wound covering (10) as claimed in one of the preceding claims, the wound covering comprising an indicator, in particular a pH indicator.

20. The wound covering (10) as claimed in claim 19, the indicator being a sensor, in particular a biosensor.

5 21. The wound covering as claimed in claim 20, the sensor being a conductive polymer which changes its conductivity depending on the state of the wound or wound covering.

10 22. The wound covering (10) as claimed in one of claims 19 to 21, the indicator being an indicator indicating the liquid content of the matrix (12).

15 23. The wound covering (10) as claimed in claim 19 to 21, the indicator being an indicator indicating the degree and/or type of a microbial contamination of the matrix (12) or of the wound.

20 24. The wound covering (10) as claimed in claim 19 to 21, the indicator being an indicator indicating an inflammatory status of the wound.

25 25. A process for the production of a wound covering (10) as claimed in one of the preceding claims, having the following steps:

- making available of an absorbent matrix (12),
- making available of a gas-permeable but liquid-impermeable film (14),
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- application of a self-adhesive first area (16) on or to the film (14) and
- 35 - connection of the absorbent matrix (12) to the film in a second area (17) of the film (14),

- the first area surrounding the second area (17) of the film (14),

5 by evaporation and deposition, a sputtering process or chemical vapor deposition first an antimicrobially active substance and then, by plasma polymerization, a polymer being deposited on the matrix (12) or a fiber forming the matrix (12).